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(54) **ELECTRICAL TERMINAL ASSEMBLY**

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H01R 4/48	(2006.01)
H01R 13/18	(2006.01)

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(58) **Field of Classification Search**

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USPC 439/370, 856, 839, 857

See application file for complete search history.

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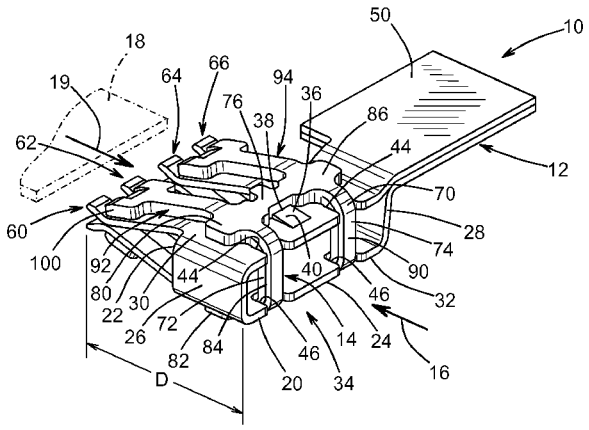
(57) **ABSTRACT**

An electrical assembly includes a base having a body including a first end and a second end. First and second opposed base beams extend from the first end of the body in a first direction. The assembly further includes a spring clamp having a clamp base and first and second opposed spring beams extending from the clamp base in the first direction and disposed over the first and second base beams biasing the first and second base beams towards one another. The spring clamp is assembled onto the base by moving the spring clamp along the first direction onto the base. A locking feature is integrally formed in the base and the spring clamp preventing the removal of the spring clamp from the base along a second direction opposite the first direction. The locking feature also prevents movement of the spring clamp relative to the base in a lateral direction normal to the first direction.

19 Claims, 5 Drawing Sheets



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H01R 13/04	(2006.01)

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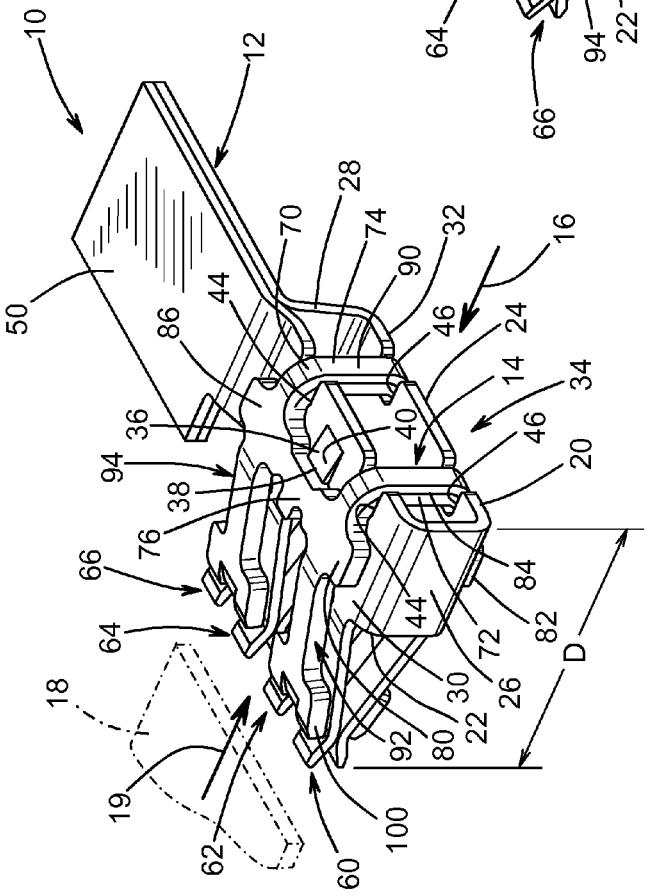
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FIG. 1

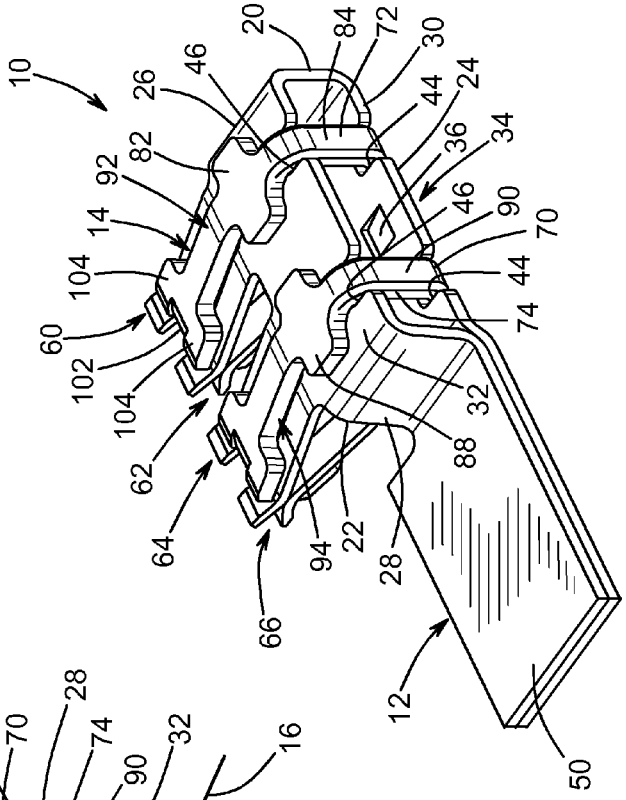
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FIG. 2

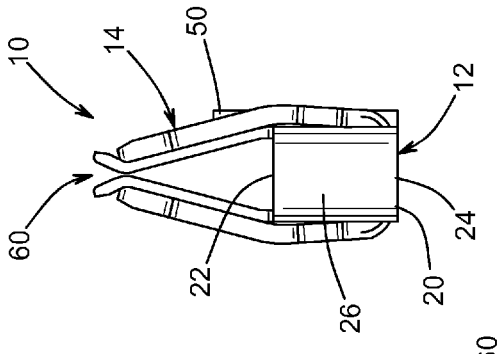

FIG. 4

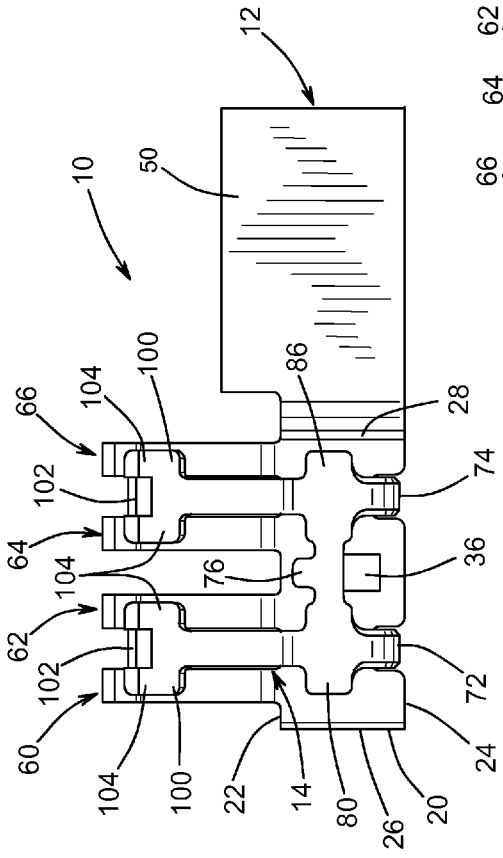

FIG. 3

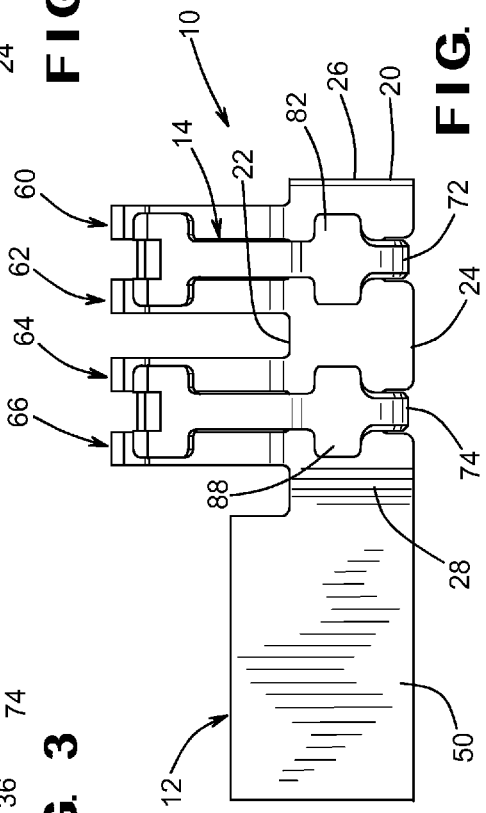

FIG. 5

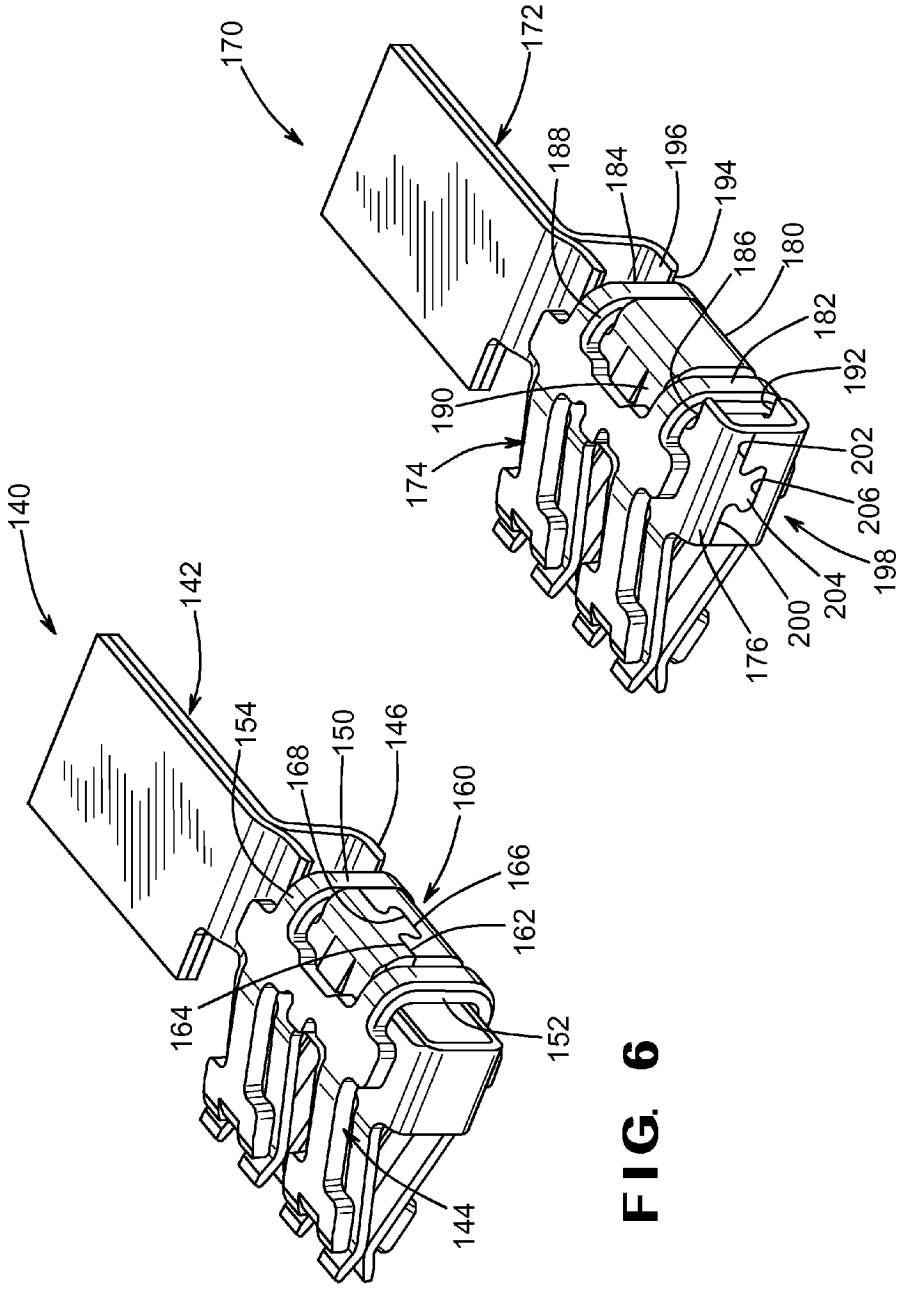
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FIG. 6

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FIG. 7

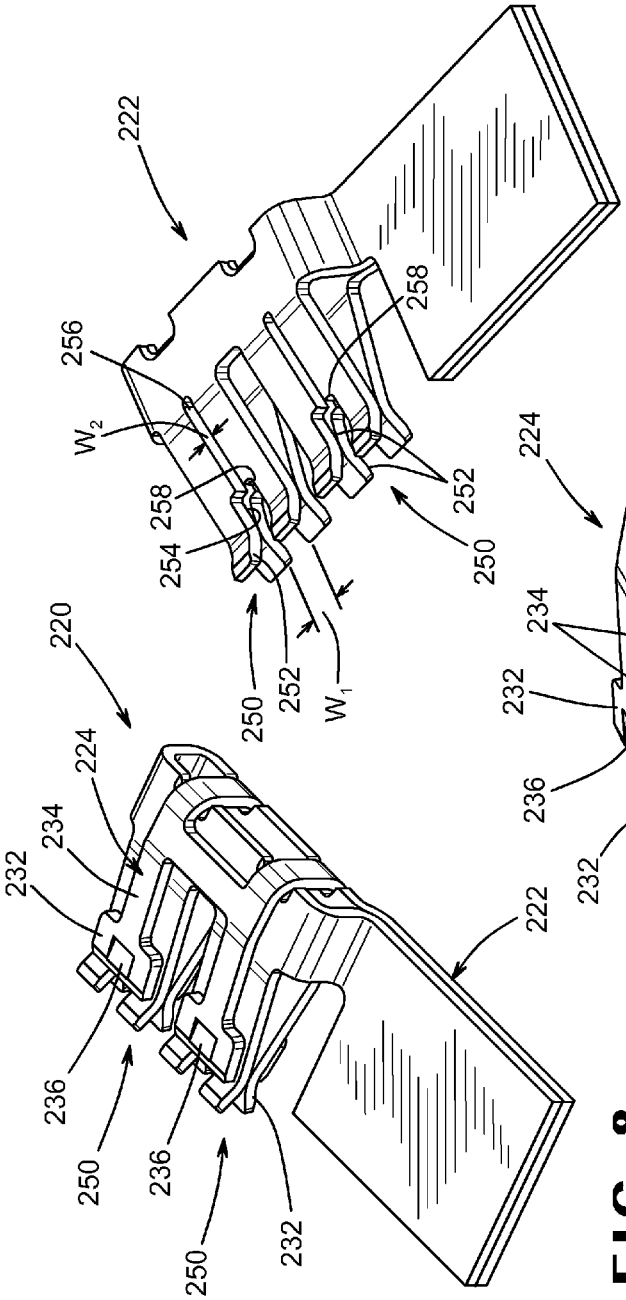

FIG. 8

FIG. 9

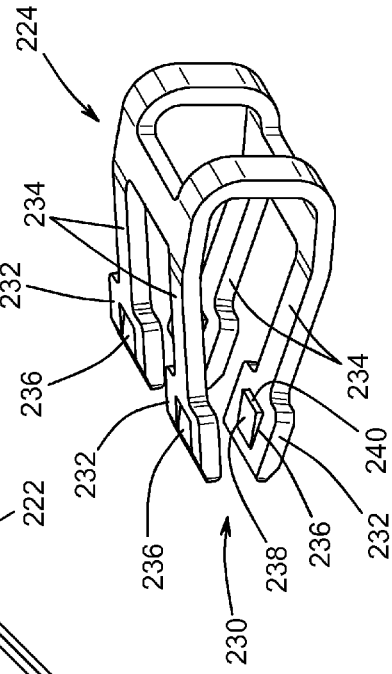

FIG. 10

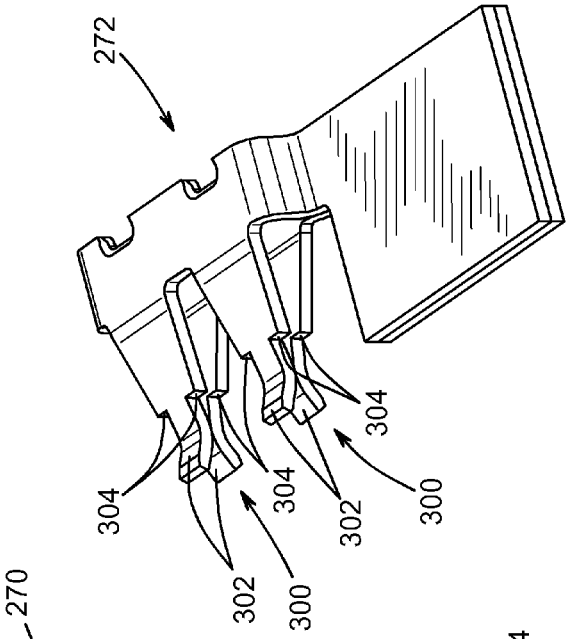

FIG. 12

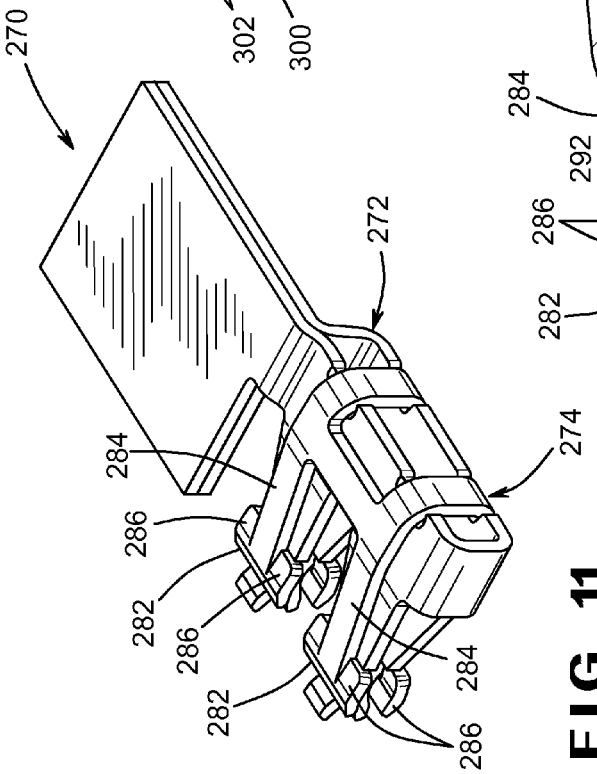

FIG. 11

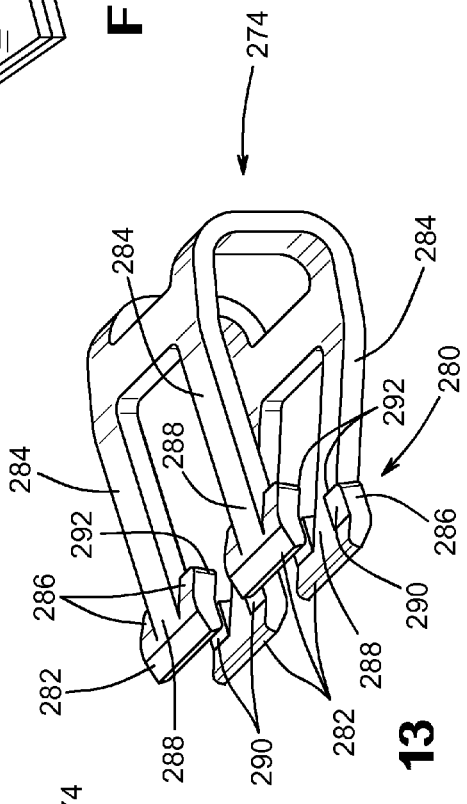

FIG. 13

ELECTRICAL TERMINAL ASSEMBLY

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application No. 61/860,973, filed Aug. 1, 2013, the disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

This invention relates in general to electrical terminals such as for use in high power vehicle electrical connectors. Electrical connectors commonly include a body having a nonconductive housing encasing a conductive set of female electrical terminals. The set of female terminals are each connected to a respective end of a wire connector or fuse element retained in the housing for completing an electrical circuit. The female terminals are inserted over a set of male blade terminals. For example, the male blade terminals may be housed in another connector housing, such as for example, a power distribution box. The female terminals are typically designed with a spring-type feature to maintain a strong electrical contact with the outer surface of the male terminal blades.

Copper has good electrical conductivity properties, and has been a preferred material for terminals even though it is relatively expensive. However, copper is susceptible to relaxation (i.e., loss of spring force) as the temperature of the copper material increases. Since the temperature of the terminals increases as the current drawn in the electrical circuit increases, copper terminals have a reduced ability to maintain strong clamping force onto the male terminal blades. Relaxation of the female terminals may decrease the overall contact area with the male blades, resulting in reduced electrical conductivity, increased resistance, and a further increase in temperature.

It is desirable to keep the overall size of an electrical distribution box or other connectors as small as possible while still providing the necessary current-carrying capacity. In some situations, the spring force cannot be further increased by simply making the terminals thicker or wider. When copper is used, the size limitations may make the desired spring force unattainable.

Some conventional electrical terminals have a two-piece configuration such that a copper base is used for providing the electrical communication with a wire connector. The base includes a plurality of fingers or beams which mechanically and electrically engage with a male terminal. A spring clamp is disposed over the plurality of beams of the base such that a compressive force biases the beams in an inward direction against the male terminal. The spring clamp is made of a suitable material, such as steel, having a high yield strength or spring-like quality. The material of the spring clamp retains its spring like qualities over a relatively large temperature range, which is ideal for high power applications, such as within electric or hybrid vehicles.

SUMMARY OF THE INVENTION

This invention relates to electrical terminals and, in particular to a two-piece electrical assembly including a base having a body including a first end and a second end. First and second opposed base beams extend from the first end of the body in a first direction. The assembly further includes a spring clamp having a clamp base and first and second opposed spring beams extending from the clamp base in the first direction and disposed over the first and second base beams biasing the first and second base beams towards one another. The spring clamp is assembled onto the base by moving the spring clamp along the first direction onto the base. A locking feature is integrally formed in the base and the spring clamp preventing the removal of the spring clamp from the base along a second direction opposite the first direction. The locking feature also prevents movement of the spring clamp relative to the base in a lateral direction normal to the first direction.

According to another embodiment of an electrical terminal assembly, the assembly includes a base having a body including a first end and a second end. First and second opposed base beams extend from the first end of the body in a first direction. The second end of the body includes a notch formed therein. A spring clamp has a clamp base and first and second opposed spring beams extending from the clamp base in the first direction and disposed over the first and second base beams biasing the first and second base beams towards one another. A portion of the clamp base extends into the notch of the base preventing movement of the spring clamp relative to the base in a lateral direction normal to the first direction.

Various aspects of this invention will become apparent to those skilled in the art from the following detailed description of the preferred embodiments, when read in light of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective top view of a first embodiment of an electrical terminal assembly.

FIG. **2** is a bottom perspective view of the electrical terminal assembly of FIG. **1**.

FIG. **3** is a top plan view of the electrical terminal assembly of FIG. **1**.

FIG. **4** is an elevational end view of the electrical terminal assembly of FIG. **1**.

FIG. **5** is a bottom view of the electrical terminal assembly of FIG. **1**.

FIG. **6** is a perspective view of a second embodiment of an electrical terminal assembly.

FIG. **7** is a perspective view of a third embodiment of an electrical terminal assembly.

FIG. **8** is a perspective view of a fourth embodiment of an electrical terminal assembly.

FIG. **9** is a perspective view of a base of the electrical terminal assembly of FIG. **8**.

FIG. **10** is a perspective view of a spring clamp of the electrical terminal assembly of FIG. **8**.

FIG. **11** is a perspective view of a fifth embodiment of an electrical terminal assembly.

FIG. **12** is a perspective view of a base of the electrical terminal assembly of FIG. **11**.

FIG. **13** is a perspective view of a spring clamp of the electrical terminal assembly of FIG. **11**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, there is illustrated in FIG. **1** a first embodiment of an electrical terminal assembly, indicated generally at **10**. The electrical terminal assembly **10** includes a base, indicated generally at **12**, and a spring clamp, indicated generally at **14**. In an assembled condition of the electrical terminal assembly **10**, the spring clamp **14** is inserted over the base **12**, as shown in FIG. **1**. It should be understood that the base **12** and the spring clamp **14** may be

shaped other than shown in the figures. As will be described below, the spring clamp **14** is assembled or mounted on the base **12** along an assembly direction **16** in a back loaded manner (from a rear end of the base) to form the electrical terminal assembly **10**.

The electrical terminal assembly **10** is used to make an electrical connection with an electrical connector, such as a male terminal blade, indicated by broken lines **18**, as shown in FIG. **1**. The blade **18** is inserted into the electrical terminal assembly **10** along an insertion direction **19** opposite the assembly direction **16**. The electrical terminal assembly **10** may be inserted, molded into, or otherwise secured to a plastic body of a connector (not shown). The connector may include multiple electrical terminal assemblies **10** mounted therein. The electrical terminal assembly **10** is well suited for use in high power distribution boxes used in automotive vehicles.

The base **12** may be formed from a single metallic blank which is stamped and formed into the configuration shown in FIGS. **1** through **5**. Similarly, the spring clamp **14** may also be formed from a single metallic blank which is stamped and formed into the configuration shown in FIGS. **1** through **5**. The base **12** is preferably made of an electrically conductive material such as a copper alloy or an aluminum alloy. As will be explained below, the spring clamp **14** generally is provided to assist in forcing or pushing electrical contact engagement surfaces of the base **12** against the blade **18**. Therefore, the spring clamp **14** is preferably made of a material, such as stainless steel, having a relatively high yield strength or spring-like quality. Preferably, the material of the spring clamp **14** can retain its spring like qualities over a relatively large temperature range, which can act on the electrical terminal assembly **10** in high power applications, such as within electric or hybrid vehicles.

The base **12** includes a box-shaped body **20** defining a front end **22**, a rear end **24**, and a pair of side walls **26** and **28**. In the illustrated embodiment shown in FIGS. **1** through **5**, the front end **22** and the rear end **24** are open such that they do not have solid wall portions formed from folded portions of the blank. It should be understood that the front end **22** and rear end **24** may include wall portions (not shown) if so desired. The body **20** further defines an upper plate **30** spaced from a lower plate **32**. The upper and lower plates **30** and **32** extend from the front end **22** to the rear end **24**.

The body **20** includes a locking feature, indicated generally at **34**, which prevents the removal of the spring clamp **14** after assembly onto the base **12** and prevents movement of the spring clamp **14** relative to the base **12** in a lateral direction normal to the assembly direction **16** and the insertion direction **19**, as will be discussed in detail below. The locking feature **34** includes a tab **36** extending outwardly from the upper plate **30** which engages with a portion of the spring clamp **14** at an edge **38** of the tab **36**. The tab **36** includes a sloped surface **40** rising in height as moving in the assembly direction **16** along the surface of the upper plate **30**. The tab **36** may be created using a cutting and/or lancing operation. For example, a U-shaped cut may be sheared into the upper plate **30**. The material within the U-shaped cut is punched outwardly leaving the tab **36** attached to the upper plate **30**. During assembly, the tab **36** may be resilient such that it deflects by a relatively small amount when the spring clamp **14** is mounted onto the base **12**. Alternatively, the material of the base **12** may have sufficient strength such that the tab **36** is not deflected during the assembly process.

The locking feature **34** may also be defined by notches or other features formed in the base **12** which interact with the spring clamp **14** to prevent the movement of the spring clamp **14** relative to the base **12** in a lateral direction normal to the assembly direction **16** and the insertion direction **19**. For example, the upper plate **30** of the base **12** may include pair of spaced apart notches **44** formed therein which receives portions of the spring clamp **14**, as will be discussed below. Similarly, the lower plate **32** of the base **12** may include a pair of spaced apart notches **46** formed therein also receiving portions of the spring clamp **14**.

The base **12** further includes a terminal plate **50** extending outwardly from the side wall **28**. The terminal plate **50** is used to connect with an end of a wire conductor (not shown). The end of the wire conductor may be welded, soldered, or otherwise connected to a flat surface **52** of the terminal plate **50** to provide electrical communication between the wire conductor and the base **12**. The terminal plate **50** can have any shape or configuration suitable for connecting to the end of the wire connector. As shown in FIGS. **1** and **2**, the terminal plate **50** is formed from a pair of relatively thin strip portions of the blank folded against one another. The terminal plate **50** may extend outwardly from the body **20** in any direction.

Extending from the front end **22** of the body **20** are a plurality of elongated fingers or base beams which engage the blade **18** to complete an electrical connection between the base **12** and the blade **18**. In the embodiment shown, the base **12** includes four pairs of opposed base beams, indicated generally at **60**, **62**, **64**, and **66**, extending outwardly from the front end **22** of the body **20** in the insertion direction. Each pair of base beams **60**, **62**, **64**, and **66** includes a base beam extending from the upper plate **30** and a base beam extending from the lower plate **32**. The base beams are resilient such that each base beam from the pair of base beams **60**, **62**, **64**, and **66** will move outwardly from one another to receive the blade **18** when inserted therebetween. The base beams provide electrical contact with the blade **18**.

The spring clamp **14** has body **70** defining a first U-shaped clamp base **72** and a second U-shaped clamp base **74**. The first and second clamp bases **72** and **74** may be integrally formed together by a bridge **76**, as shown in FIGS. **1** through **5**, or may be separate from one another. The first clamp base **72** includes an upper pad **80**, a lower pad **82**, and a U-shaped strut **84** connecting the upper and lower pads **80** and **82** together. Similarly, the second clamp base **74** includes an upper pad **86**, and lower pad **88**, and a strut **90** connecting the upper and lower pads **86** and **88** together. The upper pads **80** and **86** are positioned against the upper plate **30** of the base **12**. The lower pads **82** and **88** are positioned against the lower plate **32** of the base **12**. The bridge **76** is attached to the upper pads **80** and **86**. The pads **80**, **82**, **86**, and **88** may be wider than the struts **84** and **90** to provide stability of the spring clamp **14** on the base **12**. The struts **84** and **90** may be thinner than the pads **80**, **82**, **86**, and **88** to reduce material and weight. During final assembly of the electrical terminal assembly **10**, the struts **84** and **90** are disposed within the notches **44** and **46** of the base **12**, thereby preventing lateral movement of the spring clamp **14** relative to the base **12**.

The spring clamp **14** further includes a pair of opposed spring beams, indicated generally at **92** and **94**. The pair of spring beams **92** extends outwardly in the insertion direction **16** from the upper and lower pads **80** and **82** of the first clamp base **72**. The pair of spring beams **94** extends outwardly in the insertion direction **16** from the upper and lower pads **86** and **88** of the second clamp base **74**. The opposed spring beams are resilient such that each of the spring beams from the pair of spring beams **92** and **94** may move outwardly from one another. The pair of spring beams **92** and **94** bias the opposed base beams of the pairs of the base beams **60**, **62**, **64**, and **66** towards one another, thereby providing a clamping force. Each one of the pair of spring beams **92** and **94** provides a

clamping bias force for two pairs of base beams **60**, **62**, **64**, and **66** as shown in FIGS. **1** through **5**.

As shown in FIG. **3**, each of the spring beams of the pair of spring beams **92** and **94** include end portions **100** having an extension **102** formed between a pair of wing portions **104**. Opposed extensions **102** extend inwardly towards one another and are positioned between adjacent base beams of the pairs of base beams **60**, **62**, **64**, and **66**. This configuration helps prevent lateral movement of the spring beams relative to the base beams such that the biasing force of the spring means is uniform.

To assemble the electrical terminal assembly **10**, the pairs of spring beams **92** and **94** are positioned towards the rear end **24** of the body **20** of the base. The opposed spring beams of the pair of spring beams **92** and **94** are spread open and then the spring clamp **14** is positioned over the rear end **24** of the body **20** and inserted in the assembly direction **16** until the struts **84** and **90** are positioned within the notches **44** and **46**. During this back loaded insertion, the bridge **76** slides over the sloped surface **40** of the tab **36** until a sufficient distance such that the edge **38** of the tab **36** engages against bridge **76**. The engagement of the bridge **76** against the edge **38** of the tab **36** prevents the spring clamp **14** from moving in the insertion direction **19** opposite the assembly direction **16**. It is noted that portions of the body **20** of the base **12** and/or portions of the spring clamp **14** may flex or deflect while the bridge **76** slides over the sloped surface **40** of the tab **36**. To prevent movement of the spring clamp **14** relative to the base **12** in the insertion direction **16**, the notches **44** and **46** are sized to function as stop members such that the struts **84** and **90** are prevented from further movement once the edge **38** of the tab **36** engages with the bridge **76**. As stated above, the positioning of the struts **84** and **90** in the notches **44** and **46** also restricts lateral movement of the spring clamp **14** relative to the base **12**.

Due to the back loaded assembly as described above, the base **12** may have a relatively short depth D, as shown in FIG. **1**, compared to conventional electrical terminal assemblies such as those disclosed in U.S. Pat. No. 8,366,497, which is hereby incorporated by reference herein. U.S. Pat. No. 8,366,497 discloses a front loaded assembled electrical terminal assembly such that the spring clamp is inserted onto the base in the opposite direction from the assembly direction **16**. Although the dimension of the spring clamp **14** may be the same compared to conventional spring clamps, such as those disclosed in U.S. Pat. No. 8,366,497, the depth D of the base **12** may be significantly reduced, thereby providing an electrical terminal assembly **10** requiring less packaging depth.

There is illustrated in FIG. **6** a second embodiment of an electrical terminal assembly, indicated generally at **140**. The electrical terminal assembly **140** is similar in structure and function as the electrical terminal assembly **10** described above. Thus, only some of the differences will be described below. The electrical terminal assembly **140** includes a base, indicated generally at **142**, and a spring clamp, indicated generally at **144**. The base **142** includes a rear end **146** having a solid rear wall portion **150** instead of being open such as the rear end **24** of the base **12**. When the electrical terminal assembly **140** is assembled, the rear wall portion **150** extends between struts **152** and **154** of the spring clamp **144**. The rear wall portion **150** disposed between the struts **152** and **154** helps prevent lateral movement of the spring clamp **144** relative to the base **142**.

The rear wall portion **150**, as well as all other portions of the base **152**, may be formed from a single blank which is stamped and folded to the configuration shown in FIG. **6**. The base **152** includes an interlock, indicated generally at **160**, which connects edges **162** and **64** of the blank together. The interlock **160** may connect the first and second edges **162** and **164** in a non-over lapping manner. For example, the base **152** may include a dovetail tab **166** extending from the first edge **162** of the blank which interlocks with a correspondingly shaped dovetail recess **168** formed in the second edge **164** of the blank. Of course, the edges **162** and **164** of the blank may also be welded, adhered, or otherwise attached to one another to form the base **152**. The use of a dovetail configuration provides a mechanical interlock such that the first edge **162** is prevented from being pulled away from the second edge **164**. The dovetail tab **166** has a flared enlarged portion that is connected to the first edge **162** by a reduced necked down portion of the dovetail tab.

There is illustrated in FIG. **7** a third embodiment of an electrical terminal assembly, indicated generally at **170**. The electrical terminal assembly **170** is similar in structure and function as the electrical terminal assemblies **10** and **140** described above. Thus, only some of the differences will be described below. The electrical terminal assembly **170** includes a base, indicated generally at **172**, and a spring clamp, indicated generally at **174**. The base **172** includes a side wall **176** and a rear wall portion **180**. When the electrical terminal assembly **170** is assembled, the rear wall portion **180** extends between struts **182** and **184** of the spring clamp **174**. The base **172** includes notches **186** and **188** formed in an upper plate **190**. The base **172** also includes notches **192** and **194** formed in a lower plate **196**. The strut **152** is disposed in the notches **186** and **192**. The strut **154** is disposed in the notches **188** and **194**.

The side wall **176**, as well as all other portions of the base **172**, may be formed from a single blank which is stamped and folded to the configuration shown in FIG. **7**. The base **172** includes an interlock, indicated generally at **198**, which connects edges **200** and **202** of the blank together. The interlock **198** may connect the first and second edges **200** and **202** in a non-over lapping manner. For example, the base **172** may include a dovetail tab **204** extending from the first edge **200** of the blank which interlocks with a correspondingly shaped dovetail recess **206** formed in the second edge **202** of the blank. Of course, the edges **200** and **202** of the blank may also be welded, adhered, or otherwise attached to one another to form the base **172**. The use of a dovetail configuration provides a mechanical interlock such that the first edge **200** is prevented from being pulled away from the second edge **202**.

There is illustrated in FIG. **8** a fourth embodiment of an electrical terminal assembly, indicated generally at **220**. The electrical terminal assembly **220** is similar in structure and function as the electrical terminal assembly **10** described above. The electrical terminal assembly **220** includes a base **222**, as shown in FIG. **10**, and a spring clamp **224**, shown in FIG. **9**. One of the differences is that locking features, indicated generally at **230**, are formed on end portions **232** of spring beams **234** of the spring clamp **224**. Each of the end portions **232** of the spring beams **234** includes an inwardly extending tab **236**. The tabs **236** define sloped surfaces **238** and edges **240**. Similar to the tabs **36**, the tabs **236** may be created using a cutting and/or lancing operation.

As shown in FIG. **9**, the base **222** has two pairs of opposed base beams **250**. Each of the pairs of opposed base beams includes a stepped slot **252** formed in the base beams. Each of the slots **252** has a first portion **254** having a width W**1**, and a second portion **256** have a width W**2** which is less than the width W**1**. The first and second portions **254** and **256** define shoulders **258**. When the spring clamp **224** is mounted on the base **222**, the edges **240** of the tabs **236** of the spring clamp **224** are positioned adjacent the shoulders **258** of the base

beams. This configuration helps prevent the spring clamp **224** from being pulled away from the base **222** and also provides resistance of lateral movement of the spring beams **234** relative to the pairs of base beams **250**. Alternatively, the pairs of base beams **250** may be formed without the second portions **256** of the slots **252**.

There is illustrated in FIG. **8** a fourth embodiment of an electrical terminal assembly, indicated generally at **220**. The electrical terminal assembly **220** is similar in structure and function as the electrical terminal assembly **10** described above. The electrical terminal assembly **220** includes a base **222**, as shown in FIG. **10**, and a spring clamp **224**, as shown in FIG. **9**. One of the differences is that locking features, indicated generally at **230**, are formed on end portions **232** of spring beams **234** of the spring clamp **224**. Each of the end portions **232** of the spring beams **234** includes an inwardly extending tab **236**. The tabs **236** define sloped surfaces **238** and edges **240**. Similar to the tabs **36**, the tabs **236** may be created using a cutting and/or lancing operation.

As shown in FIG. **9**, the base **222** has two pairs of opposed base beams **250**. Each of the pairs of opposed base beams **250** includes a stepped slot **252** formed in the base beams. Each of the slots **252** has a first portion **254** having a width W1, and a second portion **256** have a width W_2 which is less than the width W_1. The first and second portions **254** and **256** define shoulders **258**. When the spring clamp **224** is mounted on the base **222**, the edges **240** of the tabs **236** of the spring clamp **224** are positioned adjacent the shoulders **258** of the base beams, as shown in FIG. **8**. This configuration helps prevent the spring clamp **224** from being pulled away from the base **222**. Preferably, the width W_1 of the first portions **254** of the slots **252** are equal to or slightly greater than the width of the tabs **236** such that the tabs **236** are disposed and snug within the first portions **254** of the slots **252** when the spring clamp **224** is fully assembled onto the base **222** to provides resistance of lateral movement of the spring beams **234** relative to the pairs of base beams **250**. Alternatively, the pairs of base beams **250** may be formed without the second portions **256** of the slots **252**.

There is illustrated in FIG. **11** a fifth embodiment of an electrical terminal assembly, indicated generally at **270**. The electrical terminal assembly **270** is similar in structure and function as the electrical terminal assembly **10** described above. The electrical terminal assembly **270** includes a base **272**, as shown in FIG. **12** and a spring clamp **274**, as shown in FIG. **13**. One of the differences is that locking features, indicated generally at **280**, are formed on end portions **282** of spring beams **284** of the spring clamp **282**. Each of the end portions **282** of the spring beams **284** includes a pair of inwardly extending tabs **286** disposed on either side of a central portion **288** of the spring beams **234**. Each of the pairs of tabs **286** defines a sloped surface **290** and an edge **292**.

As shown in FIG. **12**, the base **272** has two pairs of opposed base beams **300**. Each of the pairs of opposed base beams **300** includes a narrowed central tip portion **302** defining a pair of shoulders **304** on either side of the central tip portion **302**. When the spring clamp **274** is mounted on the base **272**, the edges **292** of the tabs **286** of the spring clamp **274** are positioned adjacent the shoulders **304** of the base beams **300**, as shown in FIG. **11**. This configuration helps prevent the spring clamp **274** from being pulled away from the base **272** and also provides resistance of lateral movement of the spring beams **284** relative to the pairs of base beams **300**.

The principle and mode of operation of this invention have been explained and illustrated in its preferred embodiments. However, it must be understood that this invention may be practiced otherwise than as specifically explained and illustrated without departing from its spirit or scope.

What is claimed is:

1. An electrical terminal assembly comprising:

a base including a body having a first end and a second end, wherein first and second opposed base beams extend from the first end of the body in a first direction;

a spring clamp having a clamp base and first and second opposed spring beams extending from the clamp base in the first direction and disposed over the first and second base beams biasing the first and second base beams towards one another, wherein the spring clamp is assembled onto the base by moving the spring clamp along the first direction onto the base; and

a locking feature integrally formed in the base and the spring clamp preventing the removal of the spring clamp from the base along a second direction opposite the first direction, and wherein the locking feature prevents movement of the spring clamp relative to the base in a lateral direction normal to the first direction.

2. The assembly of claim **1**, wherein the locking feature includes a tab formed in the base which engages with a portion of the clamp base when the spring clamp is fully assembled onto the base.

3. The assembly of claim **2**, wherein the tab includes a sloped surface upon which the clamp base slides along when being assembled onto the base when moved in the first direction.

4. The assembly of claim **3**, wherein the tab is resiliently formed in the base such that the tab may be deflected during assembly of the spring clamp onto the base.

5. The assembly of claim **3**, wherein the tab is formed by a lancing operation.

6. The assembly of claim **1**, wherein the locking feature includes a tab formed in the spring clamp which engages with a portion of the base when the spring clamp is fully assembled onto the base.

7. The assembly of claim **6**, wherein the tab is formed on an end portion of one of the first and second spring beams.

8. The assembly of claim **7**, wherein the tab includes a sloped surface sliding along the base beams when the spring clamp is being assembled onto the base and moved in the first direction.

9. The assembly of claim **7**, wherein the tab is formed by a lancing operation.

10. The assembly of claim **7**, wherein the first base beam includes a slot extending in the first direction, and wherein the slot defines a shoulder formed in the first base beam which engages with the tab when the spring clamp is assembled onto the base.

11. The assembly of claim **10**, wherein the width of the slot is equal to or greater than the width of the tab such that the tab is disposed within the slot when the spring clamp is fully assembled onto the base.

12. The assembly of claim **1**, wherein the locking feature includes a pair of spaced apart tabs formed on an end of the first spring beam which engage with spaced apart shoulders formed in the first base beam.

13. The assembly of claim **12**, wherein the first base beam includes an end portion extending outwardly from between the shoulders, and wherein the end portion includes an electrical contact for engagement with a blade terminal.

14. The assembly of claim **1**, wherein the second end of the body includes a notch formed therein, and wherein a portion of the clamp base extends into the notch of the base preventing movement of the spring clamp relative to the base in a lateral direction normal to the first direction.

15. The assembly of claim 1, wherein the base is made from a folded flat blank and the body of the base includes side walls extending between the first and second ends of the base, and wherein a terminal plate extends from one of the side walls.

16. The assembly of claim 15, wherein one of the side walls is defined by joining a first edge of the flat blank with an opposite second edge of the flat blank together, and wherein a tab is formed in the first edge which interlocks with a recess formed in the second edge to prevent separation of the edges.

17. The assembly of claim 16, wherein a portion of the folded blank forms a rear wall defined by joining a first edge of the flat blank with an opposite second edge of the flat blank together, and wherein a tab is formed in the first edge which interlocks with a recess formed in the second edge to prevent separation of the edges.

18. The assembly of claim 1, wherein the first and second opposed base beams defines a first pair of base beams, and wherein the base further includes a second pair of base beams, and wherein the first and second spring beams defines a first pair of spring beams, and wherein the spring clamp further includes a second pair of spring beams engaged with the second pair of base beams, and wherein the spring clamp includes a cross member connecting the first and second pair of spring beams to one another.

19. An electrical terminal assembly comprising:

a base including a body having a first end and a second end, wherein first and second opposed base beams extend from the first end of the body in a first direction, and wherein the second end of the body includes a notch formed therein; and

a spring clamp having a clamp base and first and second opposed spring beams extending from the clamp base in the first direction and disposed over the first and second base beams biasing the first and second base beams towards one another, wherein a portion of the clamp base extends into the notch of the base preventing movement of the spring clamp relative to the base in a lateral direction normal to the first direction.

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